

Claims

1. A protocol for adapting the degree of interactivity between a participant equipment item and a reciprocal participant equipment item of a set of participant equipment items, when this participant equipment item and this reciprocal participant equipment item are subjected to an interactive dialogue, wherein it consists at least:

- a) in writing, into said participant equipment item, a list of reciprocal participant equipment identifiers ;
- b) in writing, into said participant equipment item, a list of behavior identifiers, said behaviors being relevant in said interactive dialogue;
- c) in writing, into said participant equipment item, at least one association between an equipment identifier and a behavior identifier and, in order to execute this interactive dialogue, when this participant equipment item and at least one reciprocal participant equipment item are in each other's presence;
- d) in carrying out a procedure of authentication between said participant equipment item and said reciprocal participant equipment item, and
 - in searching for the identifier of the authenticated reciprocal participant equipment item in said list of identifiers;
 - in reading said associated behavior identifier;
 - in applying, at the participant equipment item, a behavior relative to the authenticated reciprocal participant equipment item, this behavior being selected as a function of the result of the authentication procedure and associated with the behavior identifier and with the identifier of the reciprocal participant equipment item.

2. The protocol as claimed in claim 1, wherein, in the event of a negative response to the step of searching for the identifier of the authenticated reciprocal participant equipment item in the list of identifiers, said protocol consists in calling and applying a default behavior procedure that is selected as a function of the result of said authentication procedure.

3. The protocol as claimed in either claim 1 or claim 2, wherein said procedure of authentication between the participant equipment item and the reciprocal participant equipment item is a procedure at more than one authentication level.

4. The protocol as claimed in any one of claims 1 to 3, for reciprocally adapting the interactivity between a participant equipment item and a reciprocal participant equipment item of a set of participant equipment items, when this participant equipment item and this reciprocal participant equipment item are subjected to an interactive dialogue, wherein it consists:

a) in writing, into each participant equipment item and into each reciprocal participant equipment item, respectively, a list of identifiers of reciprocal participant equipment items and participant equipment items, respectively;

b) in writing, into each participant equipment item and into each reciprocal participant equipment item, respectively, a list of behavior identifiers, said behaviors being defined in said interactive dialogue;

c) in writing at least one association between an equipment identifier and a behavior identifier into each participant equipment item and each reciprocal participant equipment item, each participant equipment item and each reciprocal participant equipment item, respectively, having at least one association between an identifier of reciprocal participant equipment items and a behavior identifier, respectively between an identifier of participant equipment items and a behavior identifier; and, in order to execute this interactive dialogue, when a participant equipment item and a reciprocal participant equipment item are in each other's presence,

- d) in carrying out a procedure of reciprocal authentication between said participant equipment item and said reciprocal participant equipment item; and
- e) in searching for the identifier of the authenticated reciprocal participant equipment item and of the authenticated participant equipment item, respectively, in said lists of identifiers;
- f) in reading at least said associated behavior identifier in the participant equipment item and in the reciprocal participant equipment item, respectively;
- g) in applying, independently, at the authenticated participant equipment item and the authenticated reciprocal participant equipment item, respectively, a behavior relative to the authenticated reciprocal participant equipment item and the authenticated participant equipment item, respectively, this behavior being selected as a function of the result of the authentication procedure and associated with the behavior identifier and with the identifier of the reciprocal participant equipment item and with the behavior identifier, respectively, and with the identifier of the participant equipment item.

5. The protocol as claimed in any one of claims 1 to 4, wherein said participant equipment item comprises, stored in a non-volatile memory, at least:

- a list of identifiers of reciprocal participant equipment items, one of the list elements of which designates the identifier of said reciprocal participant equipment item;
- a list of identifiers of the behaviors of said participant equipment item relative to a reciprocal participant equipment item, said list comprising at least one element forming a behavior reference of interactive dialogue acceptance, of interactive dialogue refusal or of interactive dialogue conditional acceptance;
- a list of associations between an equipment identifier and a behavior identifier, said list of associations allowing an element of the list of identifiers of reciprocal participant equipment items and an element of the list of behavior identifiers to be brought into correspondence with each other.

6. The protocol as claimed in either claim 4 or claim 5, wherein said reciprocal participant equipment item comprises, stored in a non-volatile memory, at least:

- a list of identifiers of participant equipment items, one of the list elements of which designates the identifier of said reciprocal participant equipment item;
- a list of identifiers of the behaviors of said reciprocal participant equipment item relative to a participant equipment item, said list comprising at least one element forming a behavior reference of interactive dialogue acceptance, of interactive dialogue refusal or of interactive dialogue conditional acceptance;
- a list of associations between an equipment identifier and a behavior identifier, said list of associations allowing an element of the list of identifiers of participant equipment items and an element of the list of behavior identifiers to be brought into correspondence with each other.

7. The protocol as claimed in any one of claims 1 to 6, wherein said participant equipment item is formed by a terminal, provided with a microprocessor card reader, said reciprocal participant equipment item being formed by a microprocessor card.

8. The protocol as claimed in claim 7, wherein said participant equipment item is formed by a terminal for descrambling scrambled information, said scrambled information being transmitted in point-to-multipoint mode from an emission center, access to this information being controlled from access control messages containing the cryptogram of a control word and access criteria that are transmitted periodically with the scrambled information, and said reciprocal participant equipment item being formed by a dedicated microprocessor card, serving as an access control module, comprising at least one security processor and a secure, programmable, non-volatile memory comprising written access rights, said written access rights being managed from messages for managing the access rights transmitted with the scrambled information, said access to this information being controlled by verifying the identity of at least one access control right that is written into the card and of one of the

access criteria, and by deciphering, in said reciprocal participant equipment item of the cryptogram, the control word from an operating key, in order to restore the control word, allowing the scrambled information to be descrambled in said participant equipment item from this restored control word, in said participant equipment item,

- said at least one element forming a behavior reference of interactive dialogue acceptance is formed by a list of behaviors relative to reciprocal participant equipment items that are authorized to initiate said interactive dialogue;

- said at least one element forming a behavior reference of interactive dialogue refusal is formed by a list of behaviors relative to reciprocal participant equipment items that are authorized to initiate said interactive dialogue, from which the facility to initiate said interactive dialogue has been withdrawn.

9. The protocol as claimed in claim 8, wherein, in said reciprocal participant equipment item,

- said at least one element forming a behavior reference of interactive dialogue acceptance is formed by a list of behaviors relative to participant equipment items that are authorized to initiate said interactive dialogue;

- said at least one element forming a behavior reference of interactive dialogue refusal is formed by a list of behaviors relative to participant equipment items that are authorized to initiate said interactive dialogue, from which the facility to initiate said interactive dialogue has been withdrawn.

10. The protocol as claimed in any one of claims 5 to 9, wherein said at least one element forming a reference of interactive dialogue conditional acceptance is formed by a list, at least one of the elements of which is representative of a functional behavior of said reciprocal participant equipment item and of said participant equipment item, respectively.

11. The protocol as claimed in any one of claims 5 to 9, wherein said at least one element forming a reference of interactive dialogue conditional acceptance is formed by a list, at least one of the elements of which is representative of a personal behavior of the user of said reciprocal participant equipment item and of said participant equipment item, respectively.

12. The protocol as claimed in any one of claims 8 to 11, wherein the steps of writing into each participant equipment item and/or each reciprocal participant equipment item are implemented by transmitting messages for managing access rights.

13. The protocol as claimed in any one of claims 8 to 12, wherein, for an authentication procedure between a descrambling terminal, serving as a participant equipment item, and a card, serving as a reciprocal participant equipment item, comprising a strong authentication level, an intermediate authentication level and a zero authentication level, said protocol consists, in accordance with the achieved authentication level and as a function of the identity of said reciprocal participant equipment terminal:

- for an achieved strong authentication level, in authorizing an access mode by impulse buying;
- for an achieved intermediate authentication level, corresponding to a strong authentication level that has not been achieved, but to the displaying of a user code for the reciprocal participant equipment that has been achieved, in authorizing the processing of all of the management messages and of all of the access control messages apart from the access mode by impulse buying; and
- for a zero authentication level, corresponding to a strong authentication level that has not been achieved, and to the displaying of a user code for the reciprocal participant equipment that has not been achieved, in authorizing the processing of the individual management messages.

14. The protocol as claimed in any one of claims 1 to 6, wherein, for a set of N equipment items connected in a network and each capable of executing an interactive dialogue with another equipment item of this set of equipment items, said protocol consists:

- in attributing, to one equipment item, the role of participant equipment item for all of the transactions, by transmitting a query message to another equipment item of said set of equipment items;
- in attributing, to this other equipment item, for this transaction, the role of reciprocal participant equipment item;
- in attributing, to said equipment item, the role of reciprocal participant for all other transactions, separate from this transaction, on receipt, by means of said equipment item, of a query message issuing from another equipment item that is separate from said set of equipment items;
- in attributing, to said other, separate equipment item, the role of participant equipment item for said other transaction;
- in applying said protocol between any equipment items, any other equipment items, and any other equipment items that are separate from said set of equipment items, to which the role of participant equipment item and/or the role of reciprocal participant equipment item has been attributed, which allows a suitable interactive dialogue to be executed between any equipment items of this set of equipment items by means of pairs of equipment items, to which the roles of participant and reciprocal participant, respectively, have been attributed.

15. The protocol as claimed in any one of claims 1 to 6, wherein, for a set of N equipment items connected in a network and each capable of executing an interactive dialogue with another equipment item of this set of equipment items, said protocol consists:

- in attributing, to one equipment item, the role of participant equipment item for all of the transactions, by transmitting a query message to a plurality of other equipment items, forming a subset of said set of equipment items;
- in attributing, to each of said other equipment items to which said query message is addressed, for this transaction, the role of reciprocal participant equipment item, relative to said participant equipment item;
- in applying said protocol between this equipment item, to which the role of participant equipment item has been attributed, and each of the other equipment items of this subset of said set of equipment items, said protocol comprising, at said participant equipment item:
 - a procedure of authentication between said participant equipment item and each of said other equipment items of this plurality of other equipment items, to which the role of reciprocal participant has been attributed, and, as a function of the result of each authentication procedure,
 - a procedure for distinguishing the behavior of said participant equipment item relative to each of said other equipment items of this plurality of other equipment items, to which the role of reciprocal participant equipment item has been attributed, and
 - a procedure for determining the common behavior of said participant equipment item relative to each of said other equipment items of this plurality of other equipment items, to which the role of reciprocal participant equipment item has been attributed, which allows said common behavior of any equipment items of this set of equipment items to be applied relative to the other equipment items of this plurality of other equipment items, forming a subset of said set of equipment items.

16. The protocol as claimed in claim 15, wherein, for a behavior of said participant equipment item relative to each of said other reciprocal participant equipment items, formed by a list of elementary behaviors of this participant equipment item, said procedure for

determining the common behavior consists in calculating the list resulting from the intersection of said lists of elementary behaviors.

17. The protocol as claimed in claim 15, wherein, for a behavior of said participant equipment item relative to each of said other reciprocal participant equipment items, formed by a list of elementary behaviors of this participant equipment item, said procedure for determining the common behavior consists in calculating the list resulting from the union of said lists of elementary behaviors.

18. The protocol as claimed in any one of claims 1 to 6, wherein, for a set of N equipment items connected in a network and each capable of executing an interactive dialogue with another equipment item of this set of equipment items, said protocol consists:

- in attributing, to one equipment item, the role of participant equipment item for all of the transactions, by transmitting a query message to a plurality of other equipment items, forming a subset of said set of equipment items;
- in attributing, to each of said other equipment items to which said query message is addressed, for this transaction, the role of reciprocal participant equipment item, relative to said participant equipment item;
- in applying said protocol between this equipment item, to which the role of participant equipment item has been attributed, and each of the other equipment items of this subset of said set of equipment items, to which the role of reciprocal participant equipment item has been attributed, said protocol comprising, at said participant equipment item:
 - a procedure of authentication of each of said other equipment items, to which the role of reciprocal participant equipment item has been attributed, and, as a function of the result of this authentication procedure, each of said other equipment items, to which the role of reciprocal participant equipment item has been attributed, being capable, individually, of executing an interactive dialogue with said equipment item, to which the role of participant equipment item has been attributed,

- a joint procedure of authentication of the subset of the reciprocal participant equipment items relative to said participant equipment item, and, as a function of the result of this joint authentication procedure, the subset of said reciprocal participant equipment items being authenticated as a joint reciprocal participant for the execution of said transaction,
- a joint procedure for authorizing the subset of the reciprocal participant equipment items to execute the interactive dialogue relative to said participant equipment item and, once the joint authorization procedure has been achieved,
- a procedure for distinguishing the joint behavior of said participant equipment item relative to the subset of the reciprocal participant equipment items, to which the role of joint reciprocal participant has been attributed, and, once the distinguishing procedure has been achieved,
- a procedure for determining and applying the joint behavior of said participant equipment item relative to said other equipment items, to which the role of joint reciprocal participant has been attributed, which allows said joint behavior of any equipment items of this set of equipment items to be applied relative to all of the plurality of equipment items, to which the role of joint reciprocal participant has been attributed.

19. The protocol as claimed in claim 18, wherein said joint authentication procedure consists in verifying to its true value the logical product of the logical values that are representative of each reciprocal authentication procedure.

20. The protocol as claimed in either claim 18 or claim 19, wherein said joint authorization procedure consists:

- in establishing, from said list of identifiers of reciprocal participant equipment items, written into said participant equipment item, a composed identifier formed by the identifier of

the reciprocal participant equipment items authorized to participate in said transaction and approved as identifiers of reciprocal participant equipment items, for which the joint authentication procedure has been verified to the true value, relative to the participant equipment item.

21. The protocol as claimed in claim 20, wherein said procedure for distinguishing the joint behavior of said participant equipment item relative to the subset of the reciprocal participant equipment items consists:

- in selecting the association between the composed identifier and a behavior identifier in said participant equipment item;
- in calling, from the composed identifier, the behaviors defined in the list of associations.

22. Computer equipment item comprising input/output means allowing messages to be transmitted and/or received in an interactive dialogue with another computer equipment item, calculation means connected to said input/output means, a working random access memory and at least one programmable, non-volatile memory, wherein said item comprises, written in the non-volatile memory, at least:

- a list of computer equipment item identifiers, accessible via said input/output means;
- a list of behavior identifiers defined in said interactive dialogue;
- at least one list of associations between an equipment identifier and a behavior identifier.

23. Computer equipment item as claimed in claim 22, wherein said item also comprises a security processor and means for authenticating any computer equipment item considered for executing an interactive dialogue with said computer equipment item.

24. Computer equipment item as claimed in either claim 22 or claim 23, wherein said item comprises means for processing the following lists: a list of equipment identifiers, a list of behavior identifiers and a list of associations between an equipment identifier and a behavior identifier.